

Request for Expression of Interest - Next Generation Nuclear Plant (NGNP) design development services for the NGNP prototype to produce process heat, hydrogen, and electricity at the Idaho National Laboratory (INL)

I. BACKGROUND/INTRODUCTION -

The Department of Energy has selected the Idaho National Laboratory as the lead national laboratory for nuclear energy research. Per the terms of the Energy Policy Act of 2005, Title VI, Subtitle C, Section 642, INL, under the direction of the DOE, will lead the development of the Next Generation Nuclear Plant (NGNP) by integrating, conducting, and coordinating all necessary research and development activities and by organizing project participants. INL, as the Managing Contractor, will be responsible for conducting project related procurements and coordinating project efforts with industry and the international community.

Battelle Energy Alliance, LLC (BEA), Management & Operating Contractor of the INL, is requesting an expression of interest from prospective subcontractors (teams, consortiums, joint ventures, etc.) that are capable of providing complete and comprehensive Engineering Services for Design Development (DD) for the Next Generation Nuclear Plant prototype that produces very high temperature heat, hydrogen, and electricity.

In FY 2007, BEA subcontracted engineering studies and preconceptual design activities with three design teams led by Westinghouse Electric Company, LLC, AREVA NP, Inc. and General Atomics. A total of 26 companies participated in this design work. In addition to the reports prepared by each of these teams, a consolidated and integrated Preconceptual Design Report will be issued in September 2007 based on this design work.

II. PURPOSE -

In FY 2008, BEA is planning to continue design development by performing selected further studies and proceeding with conceptual design. This work will support progressive selection of NGNP prototype functional requirements, design features and configuration, and refinement of cost and schedule estimates. Functional, operational, and design requirements included in the Preconceptual Design Report will be used as the starting point for these design activities.

III. REQUEST FOR EXPRESSION OF INTEREST-

BEA requests an expression of interest from qualified potential subcontractors to perform this work. The specific scope of work will be developed as part of an extension of current subcontracts or selection for a subcontract with BEA and will depend on available funding, design and technology risk characterization from preconceptual design work, and the capabilities of the interested potential subcontractors.

The three design teams that performed preconceptual design activities and provided engineering services in FY 2007 are requested to provide a confirmation of interest in performing these design development services and confirm the makeup of the teams. Extension of existing subcontracts is anticipated if existing subcontractors remain interested. However, as appropriate, other subcontracts may be awarded. To that end, additional prospective subcontractors with interest in performing such design and engineering services are requested to provide a summary submittal of qualifications in accordance with section IV Submittal Requirements.

IV. SUBMITTAL REQUIREMENTS -

Prospective subcontractors shall provide brief statements of qualifications in the following areas:

- 1) A description of current knowledge or capabilities related to Pebble Bed and Prismatic gas cooled graphite moderated reactor system designs, hydrogen plant design, and balance of plant design.
- 2) Demonstrated ability to integrate specialty disciplines and industry expertise to provide for an integrated design for a prototype reactor, power generation, and hydrogen production plant. Specialties shall include but not be limited to reactor design, Brayton and steam cycle turbomachinery, controls, hydrogen production, and balance of plant engineering and design.
- 3) The prospective subcontractor must also be able to effectively identify and evaluate technology development status and needs.
- 4) A minimum of three references who represent a direct client of the lead team member that can validate past history regarding reactor engineering and design services, ability to assemble and integrate highly specialized design elements, and performance satisfaction.
- 5) An indication of whether the prospective subcontractor possesses the capability to design a commercial scale prototype NGNP modular reactor, including examples of past design efforts.
- 6) A statement to describe the prospective subcontractor's Quality Program Plan with a discussion on how it is "qualified" to ASME NQA-1, 2000, requirements for engineering design services.
- 7) Demonstrated experience in licensing nuclear plants for construction and operation with the United States Nuclear Regulatory Commission.

Failure to provide the requisite submittals may limit a prospective subcontractor's ability in being a viable candidate for future Request for Proposal.

Again, it is the intent of this expression of interest to develop a representative list of qualified prospective subcontractors that can and will provide all submittal requirements identified within this EOI, as well as possess the interest, the resources, and capabilities to cooperatively and successfully

perform the required tasks.

Please provide your expression of interest to the undersigned by 5 p.m. Mountain Time, August 20, 2007. If you have questions or need additional information, please contact Greg Anderson on Extension (208) 526-1816 or email gregory.anderson@inl.gov. Technical questions must be submitted in writing (U.S. mail or email).

Sincerely,

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